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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,975	10/07/2003	Joachim Laurenz Naimer	UNI1773-007	4775

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EXAMINER

TRAN, DALENA

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/679,975

Applicant(s)

NAIMER ET AL.

Examiner

Dalena Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5/6/04, 5/24/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Notice to Applicant(s)

1. This application has been examined. Claims 1-31 are pending.
2. The prior art submitted on 5/6/04, and 5/24/04 have been considered.

Claim Rejections - 35 USC § 103.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3,5-7,9-10,16-17, and 20-21, are rejected under 35 U.S.C.103(a) as being unpatentable over Carriker et al. (6,571,155), in view of Maris (US 2004/0113816 A1).

As per claim 1, Carriker et al. disclose an electronic display for presenting data from a vertical speed source aboard an aircraft, wherein display comprises: a fractional section of a vertical speed indicator scale (see at least column 8, lines 48-58), and a vertical speed indicator marker (see at least column 8, lines 32-47). Carriker et al. do not disclose non-linear vertical speed indicator scale, and graduations marked on part of fractional section of vertical speed indicator scale in the vicinity of vertical speed indicator marker. However, Maris disclose vertical speed indicator scale is non-linear (see at least the abstract), wherein vertical speed indicator marker shows the vertical speed of aircraft as indicated by vertical speed source (see at least [0117] through [0123]), and wherein fractional section of vertical speed indicator scale shows graduations marked on part of fractional section of vertical speed indicator scale in the vicinity of vertical speed indicator marker (see at least [0129] through [0144]). It would have

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been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Carriker et al. by combining non-linear vertical speed indicator scale, and graduations marked on part of fractional section of vertical speed indicator scale in the vicinity of vertical speed indicator marker to provide a clearly view of vertical speed indicator to the pilot.

As per claim 2, Carriker et al. disclose vertical speed indicator scale is elliptically shaped (see at least column 8, lines 1-16).

As per claim 3, Carriker et al. disclose vertical speed indicator marker shows a vertical speed trend (see at least column 7, lines 35-67).

As per claims 5-7, Carriker et al. disclose vertical speed indicator marker is comprised of a pointer and a numeric display (see at least column 7, lines 12-34).

As per claim 9, Carriker et al. disclose fractional section of vertical speed indicator scale always shows an indicia for a value of zero vertical speed (see at least columns 8-9, lines 59-9; and columns 9-10, lines 56-20).

As per claim 10, Carriker et al. disclose vertical speed indicator marker is comprised of a digital readout of the vertical speed of aircraft (see at least columns 6-7, lines 55-12).

As per claims 16-17, Carriker et al. disclose a vertical speed bug having a shaped indicator in a position inside of fractional section of vertical speed indicator scale, wherein vertical speed bug indicates a selected vertical speed value, and vertical speed bug points to a location on fractional section of vertical speed indicator scale equivalent to selected vertical speed value (see at least column 7, lines 35-67).

As per claim 20, Carriker et al. disclose an electronic display for presenting data from a vertical speed source aboard an aircraft, wherein display comprises: a fractional section of a

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vertical speed indicator scale (see at least column 8, lines 48-58), and a vertical speed indicator marker (see at least column 8, lines 32-47), vertical speed indicator scale is elliptically shaped (see at least column 8, lines 1-16), wherein fractional section of vertical speed indicator scale shown by electronic display will change relative to the vertical speed depicted by vertical speed indicator marker (see at least column 9, lines 10-56; and columns 12-13, lines 16-26), and vertical speed indicator marker is comprised of a pointer and a numeric display (see at least column 7, lines 12-34). Carriker et al. do not disclose non-linear vertical speed indicator scale, and graduations marked on part of fractional section of vertical speed indicator scale in the vicinity of vertical speed indicator marker. However, Maris disclose vertical speed indicator scale is non-linear (see at least the abstract), wherein vertical speed indicator marker shows the vertical speed of aircraft as indicated by vertical speed source (see at least [0117] through [0123]), and wherein fractional section of vertical speed indicator scale shows graduations marked on part of fractional section of vertical speed indicator scale in the vicinity of vertical speed indicator marker (see at least [0129] through [0144]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Carriker et al. by combining non-linear vertical speed indicator scale, and graduations marked on part of fractional section of vertical speed indicator scale in the vicinity of vertical speed indicator marker to provide a clearly view of vertical speed indicator to the pilot.

As per claim 21, Carriker et al. disclose vertical speed indicator marker is shown equidistant between an upper and lower value on fractional section of vertical speed rate scale (see at least column 3, lines 1-25).

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5. Claims 4,12-13,15,24-25, and 27, are rejected under 35 U.S.C.103(a) as being unpatentable over Carriker et al. (6,571,155), and Maris (US 2004/0113816 A1) as applied to claims 1, and 20 above, and further in view of McElreath et al. (6,154,151).

As per claim 4, Carriker et al., and Maris do not disclose vertical speed indicator marker shows a vertical speed trend by its motion to replicate the motion of an analog instrument. However, McElreath et al. disclose vertical speed indicator marker shows a vertical speed trend by its motion to replicate the motion of an analog instrument (see at least column 4, lines 4-14; and column 5, lines 48-58). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Carriker et al., and Maris by combining vertical speed indicator marker shows a vertical speed trend by its motion to replicate the motion of an analog instrument to continuous update vertical speed indicator for viewing by the pilot.

Also, as per claims 12, and 24, Carriker et al., and Maris do not disclose TCAS resolution advisory. However, McElreath et al. disclose TCAS resolution advisory indicators along a periphery of vertical speed indicator scale wherein TCAS resolution advisory indicators are shown during a TCAS resolution advisory condition (see at least the abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Carriker et al., and Maris by combining TCAS resolution advisory to alert pilot about potentially hazardous aircraft targets in the area to avoid collision and assure safety to the aircraft.

As per claims 13, and 25, McElreath et al. also disclose TCAS resolution advisory condition triggers an increase in size of electronic display (see at least columns 8-9, lines 56-11).

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As per claims 15, and 27, McElreath et al. also disclose TCAS resolution advisory indicators are comprised of red marks and green marks (see at least columns 6-7, lines 46-34).

6. Claims 8,11,22-23, and 28-31, are rejected under 35 U.S.C.103(a) as being unpatentable over Carriker et al. (6,571,155), and Maris (US 2004/0113816 A1) as applied to claims 1, and 20 above, and further in view of Gralnick (4,914,733).

As per claims 8, and 22, Carriker et al., and Maris, do not disclose different continuous range of vertical speed scale. However, Gralnick disclose different continuous range of vertical speed scale (see at least column 6, lines 23-57). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Carriker et al., and Maris by combining different continuous range of vertical speed scale to provide to pilot information relating to the instantaneous vertical speed range of the aircraft to determine whether the intruding aircraft is a threat, and determines the appropriate vertical maneuver that will ensure the safe separation of the aircraft.

As per claims 11, 23, and 30, Carriker et al., and Maris, do not disclose a range of vertical speed scale. Also, Gralnick does not disclose a range of +-9999 feet per minute. However, it is obvious that Gralnick disclose range up to +-6000 FPM (see at least column 6, lines 23-57), therefore, the system of Gralnick can also expanded to display a range of +-9999FPM to provide a bigger scale display of vertical speed scale to provide a maximum rate of scale to the display. It would have been obvious to one of ordinary skill in the art at the time the invention to implement the system of Gralnick by display digital readout of the vertical speed is bounded by the range of +-9999 FPM to indicate a higher speed display value for the aircraft when the aircraft is in the higher rate of altitude.

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Also, as per claims 28-29, and 31, Gralnick disclose vertical speed indicator marker is shown parked at the edge of fractional section of vertical speed rate scale when vertical speed source indicates vertical speed of aircraft is ± 6000 FPM, fractional section of vertical speed rate scale shows a maximum indicia of either $+6000$ FPM or -6000 FPM, and fractional section of vertical speed rate scale shows an indicia for zero FPM (see at least column 6, lines 23-57).

7. Claims 14, and 26, are rejected under 35 U.S.C.103(a) as being unpatentable over Carriker et al. (6,571,155), Maris (US 2004/0113816 A1), and McElreath et al. (6,154,151) as applied to claims 12, and 24 above, and further in view of Gralnick (4,914,733).

As per claims 14, and 26, Carriker et al., Maris, and McElreath et al. do not disclose TCAS resolution advisory condition triggers vertical speed indicator scale to show a fixed arc shape. However, Gralnick discloses TCAS resolution advisory condition triggers vertical speed indicator scale to show a fixed arc shape (see at least column 3, lines 43-60; and columns 4-5, lines 38-9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Carriker et al., Maris, and McElreath et al. by combining TCAS resolution advisory condition triggers vertical speed indicator scale to show a fixed arc shape for easily viewing the vertical speed rate to the pilot.

8. Claims 18-19, are rejected under 35 U.S.C.103(a) as being unpatentable over Carriker et al. (6,571,155), and Maris (US 2004/0113816 A1) as applied to claim 16 above, and further in view of Feyereisen et al. (US 2003/0132860 A1).

As per claims 18-19, Carriker et al. disclose vertical speed bug points to a location on an edge of fractional section of vertical speed indicator scale when selected vertical speed value is outside the range of values shown by fractional section of vertical speed indicator scale (see at

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least column 7, lines 35-67). Carriker et al., and Maris do not disclose shaped indicator of vertical speed bug changes. However, Feyereisen et al. disclose shaped indicator of vertical speed bug changes to provide a visual cue, and it is obvious that the shape can change to different rate of its original shape (see at least [0063] through [0067]; and [0112] through [0116]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teach of Carriker et al., and Maris, by combining shaped indicator of vertical speed bug changes to different rate of its original shape for providing attention to the pilot depend on the level of warning.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- . Konicke et al. (4,860,007)
- . Staggs et al. (6,683,541)
- . Gaidelis, JR. Et al. (US 2004/0210355 A1)

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalena Tran whose telephone number is 703-308-8223. The examiner can normally be reached on M-F (7:30 AM-5:30 PM), off every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on 703-305-8233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patent Examiner

Dalena Tran

A handwritten signature in cursive script, appearing to read 'Dalena Tran'.

February 7, 2005